SANUPS

PARALLEL PROCESSING UPS

E23A

SANYO DENKI

Low energy, high quality, high reliability parallel processing type UPS

SANUPS E23A

PARALLEL PROCESSING UPS

NETWORK MONITORING

ECO PRODUCTS

Input	Output	Output capacity			
AC 200 V 3 phase 3 wire	AC 200 V 3 phase 3 wire	20 kVA (16 kW)	50 kVA (40 kW)	100 kVA (80 kW)	200 kVA (160 kW)

Battery backup time

8min	10min
Standard	Standard
20 kVA	50, 100, 200 kVA

30min 60min 120min 180min

External Battery

1 Saves up to 13% on electricity rates.

- Achieved 97% of power conversion efficiency.
- Contributes to environmental protection.

2 Saves installation space.

- Achieved smaller size (area reduction of 40% compared to conventional model) and lighter weight (reduction of 50% compared to conventional model).
- When using a long-duration battery, since the optional charger is not necessary, the space required for installation can be reduced by 60%.

3 Supplies power for any system without voltage sag.

- Even during blackout, instantaneous blackout, or voltage dip, the complete sine wave power is supplied without interruption.
- Eliminates equipment malfunction caused by distortion of the waveform.
- Suppresses harmonic current.

4 Easy maintenance for cost reduction.

- UPS provides a routine automatic battery check.
- Since the capacitor supplies power when a short power interruption such as an instantaneous blackout, deterioration of the battery can be reduced.

5 Installation with a small investment.

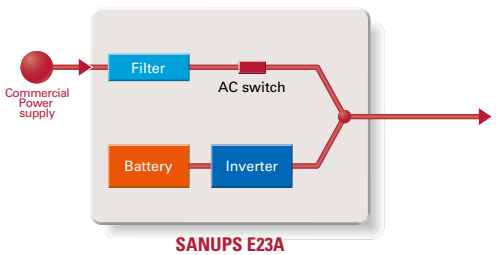
- Maintenance bypass circuit is included as standard equipment.
- Eliminates the optional charger for long-duration backup.

6 The design considers the plant facility load.

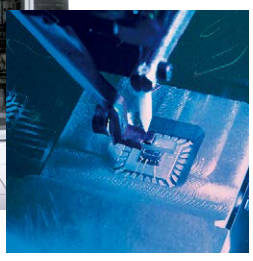
- Since the overload capacity is high (800%: 0.5 seconds), rush current such as starting motor load can be endured.

Parallel processing type UPS is...

- Since the commercial power supply and the inverter are always operating in parallel, this UPS can supply the power without interruption even when there is an instantaneous voltage dip or blackout.
- In normal mode, the power is supplied from the commercial power supply, and the inverter compensates the load side harmonic current, so that input current became sinusoidal waveform. (Active filter function)



Datacenter

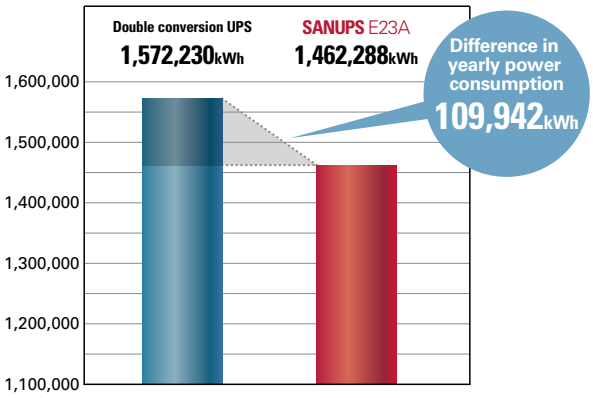


Works

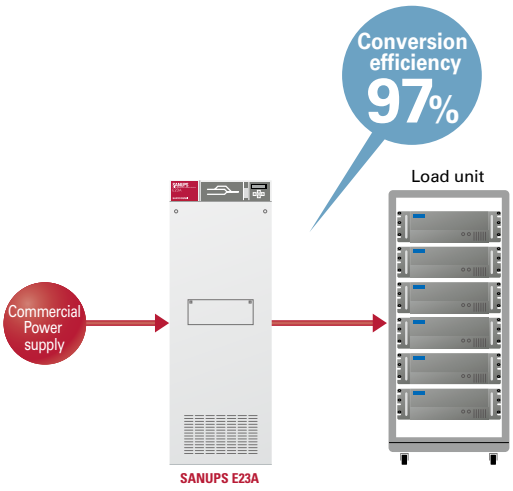
1 Saves up to 13% on electricity rates.

- The achievement of 97% power conversion efficiency enables users to reduce running-cost significantly.
- Can contribute to environmental protection.

Power consumption comparison for one year

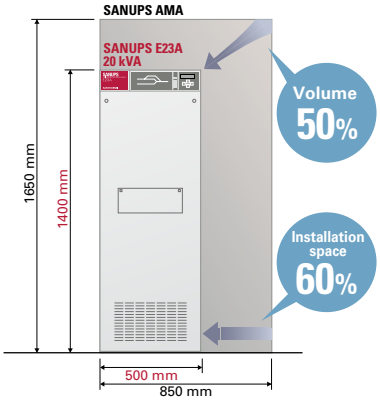


* When power is supplied based on rated power.
* Includes power consumption of facility equipment and air conditioning system used for UPS cooling.

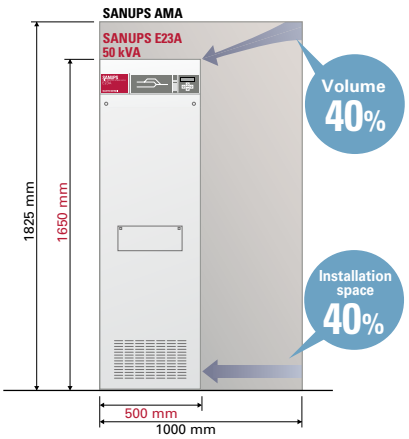


2 Saves installation space.

- Achieved smaller size (area reduction of 40% compared to conventional model) and lighter weight (reduction of 50% compared to conventional model).
- When using a long-duration battery, since the optional charger is not necessary, the space required for installation can be reduced by 60%.



Standard specification

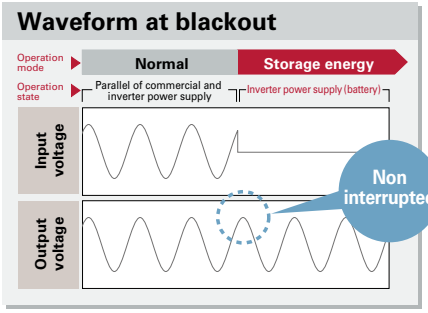


Comparison of optional charger at long-duration backup

3 Supplies power for any system without voltage sag.

- Communication equipment and computers are designed based on the assumption that uninterruptible power is supplied.
  - Even during blackout, instantaneous blackout, or voltage dip, the complete sine wave power is supplied without interruption, thus, equipment malfunction caused by the distortion waveform is eliminated.
  - Since clean waveform power is supplied to the load even when surge noise disturbs the commercial power supply, the equipment can be used comfortably.*
  - Suppresses the harmonic current caused by loads, and at the same time, improves the input power factor (active filter function).

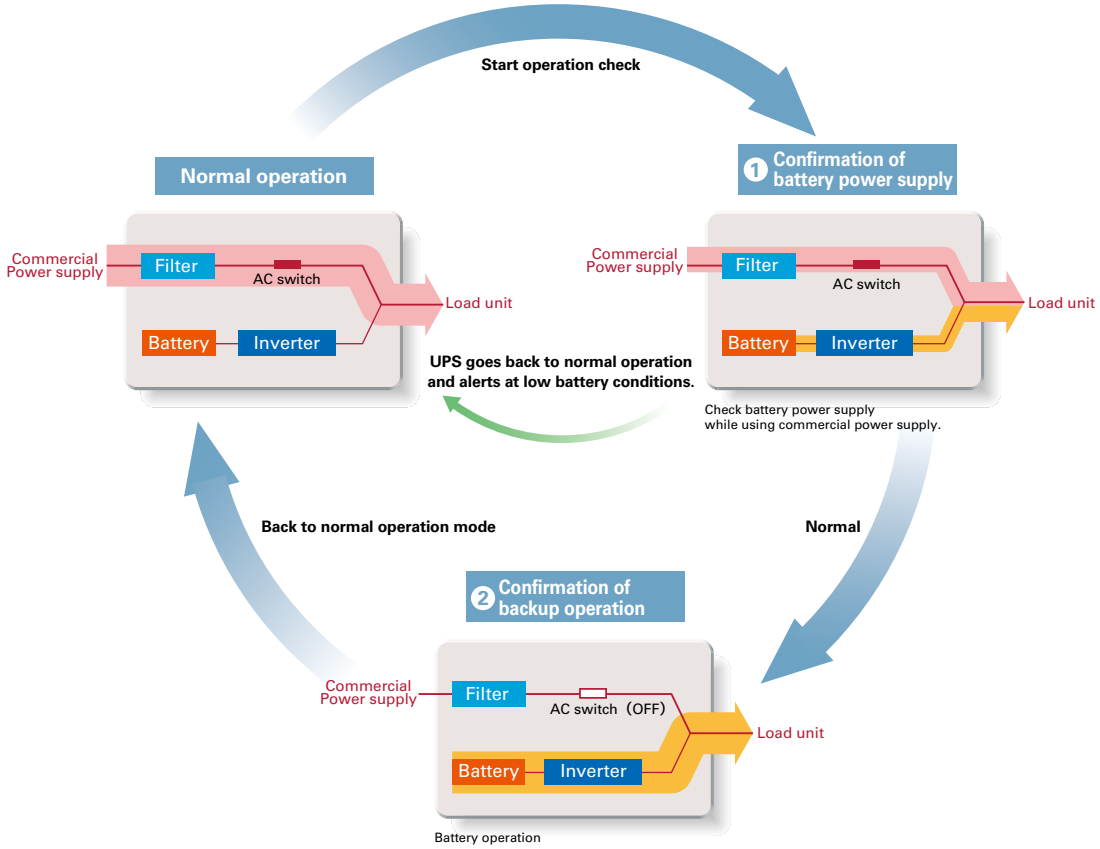
*If there is an instantaneous voltage dip or blackout, the capacitor supplies power, thus, unnecessary discharge from the batter is prevented.



4 Easy maintenance for cost reduction.

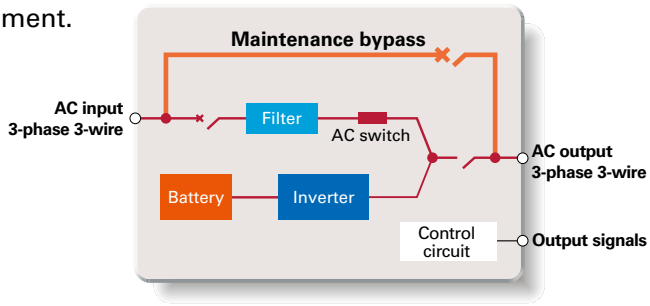
- Automatically carries out regular circuit checks in order to maintain secure backup operation.

*The schedule of the battery test can be arbitrarily set.

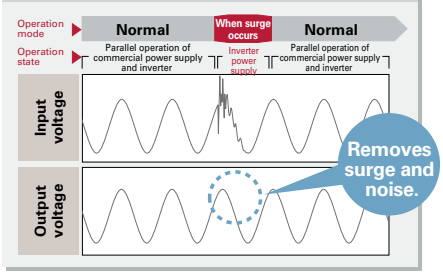


5 Installation with a small investment.

- Maintenance bypass circuit is included as standard equipment.
- Eliminates the optional charger for long-duration backup.



Waveform when surge occurs



Examples of troubles by commercial power failure

- Reset or stop of computers
- Communication failure of network equipment
- Stop or failure of equipment for automatic production line, etc.
- Poor production quality of semiconductor production equipment

Specifications

Item \ Model			E23A203	E23A503	E23A104	E23A204	Remarks
Rated output capacity (apparent power/effective power)			20 kVA / 16 kW	50 kVA / 40 kW	100 kVA / 80 kW	200 kVA / 160 kW	
Operation system			Parallel processing method				
Cooling system			Forced air				
AC input	Number of phases/wires		3 phase 3 wire				
	Rated voltage		200 V (205 V, 210 V)				
	Rated frequency		50 Hz / 60 Hz				
	Required capacity		20 kVA or less	50 kVA or less	100 kVA or less	200 kVA or less	Excluding the one for 180 minutes
	Power factor		0.98 or higher				At rated operation
	Distorted current compensation	Compensation capacity	Up to rated capacity				
		Compensation order	2 to 20th Harmonics				
		Compensation rate	85% or higher				At 100% rectifier load
AC output	Number of phase/wire		3 phase 3 wire				Same as AC input
	Rated voltage		200 V (205 V, 210 V)				
	Voltage accuracy	At commercial operation	Within -8% and +10% (factory setting)				User selectable voltage accuracy : Note 1
		At battery operation	Within ±2%				
	Rated frequency		50 Hz / 60 Hz				Same as AC input
	Rated frequency accuracy	At commercial operation	Within ±0.4% (factory setting)				User selectable frequency accuracy : Note 1
		At battery operation	Within ±0.1%				
	Load power factor	Rating	0.8 (lagging)				
		Variation range	0.7 to 1.0 (lagging)				
	Voltage waveform distortion rate	At linear load	2% or less				At battery operation
		At rectifier load	5% or less				
	Voltage unbalance rate	At battery operation	2% or less				Insert one third of the load of the total capacity to one line voltage.
	Instantaneous voltage variation	Variation rate	±5%				At battery operation
		Settling time	50ms or less				
	Overload capacity	At commercial operation	200% (30 seconds), 800% (0.5 seconds)				
		At battery operation	125% (10 minutes), 150% (1 minute)				
	Switching to battery operation		Without interruption				
Battery	Type		Small-sized sealed lead-acid battery				
	Backup time		8 minutes (built-in battery)	10 minutes (separate battery unit)			Can support up to 180 minutes by the optional battery
	Nominal voltage		336V (168 cells)	312V (156 cells)			
Acoustic noise			57 dB or less	65 dB or less	65 dB or less	70 dB or less	1 m from front, 1 m for height
Interface			LAN Interface card (Option)				
Environment			Operating temperature:0 to 40℃, Relative humidity : 30 to 90% (Non-condensing)				

Note 1: For changing voltage accuracy and frequency accuracy, contact us.

Input capacity of facilities / Amount of heat generation / Amount of cooling air / Amount of ventilation

Item \ Model	E23A203	E23A503	E23A104	E23A204	Remarks
Rated output capacity	20 kVA	50 kVA	100 kVA	200 kVA	
Input capacity of facilities	20 kVA	50 kVA	100 kVA	200 kVA	
Amount of heat generation	1.0 kW	2.6 kW	5.1 kW	10.2 kW	
Amount of cooling air	5.3 m³/min	13.4 m³/min	26.3 m³/min	52.6 m³/min	
Amount of ventilation	0.85 m³/min	2.7 m³/min	4.1 m³/min	9.3 m³/min	

Note 1: This table is calculated under the following conditions: load power factor 0.8, small-sized sealded lead-acid battery (rating), room temperature 40℃, external temperature 30℃
Note 2: Amount of heat generation and amount of cooling air are for the rated output after completion of charging the battery.
Note 3: When the optional battery is used, input capacity of facilities, amount of heat generation, amount of cooling air, and amount of ventilation are changed.

Output signals and output conditions

Output signal	Output conditions
Normal operation	Both the commercial power supply and the inverter supply power.
Inverter operating	The inverter is operating
Inverter stopped	The inverter is stopped
Battery power supply	The battery is supplying power
Low battery voltage alarm	The battery voltage is below the specified value
AC input error	The input voltage is out of the specified range
Over current	The output current is over the specified value
Minor event	An event that does not prevent continued inverter operation
Serious event	An event that results in inverter shutdown

● No-voltage contact. Contact capacity is AC 125 V, 0.3 A/DC 30 V, 1 A.

Option

Input transformer

Used for different input voltage and improving voltage balance with the ground.

External battery unit

Up to 180 minutes of blackout is supported without optional charger.

Network

- LAN interface card [Card for connection with LAN (100Base-T)]
- UPS Management software SANUPS SOFTWARE (Power management software for computers)

Connection with an engine generator

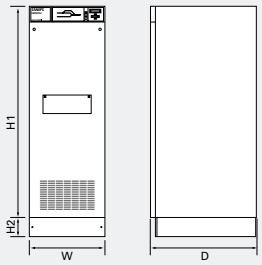
When using an engine generator with unstable voltage, frequency, or output, contact us for handling.

External dimensions

■ Inverter unit

Model	Capacity	Dimensions (mm) W	D	H1	H2	Weight (kg)
E23A203	20 kVA	500	700	1400	125	400 (240) Note1
E23A503	50 kVA			1650		350
E23A104	100 kVA	750	800	1825		600
E23A204	200 kVA	1500				1200

Note 1: The number in parentheses is the weight without battery (8 min.).

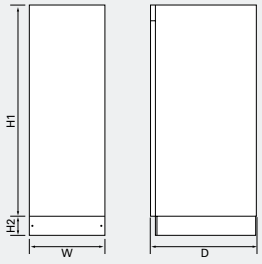


Inverter unit

■ Specifications (Battery Cubicle)

Capacity	Battery Capacity (min)	Battery Number of Cells	Battery Capacity (Ah)	Battery Cubicle dimensions (mm) W	D	H1	H2	Weight (kg)	Number of cubicle
20 kVA	8	168	17	The battery built into the inverter unit.					
	30	156	44×2	850	700	1650	125	1100	1
	60		28×4	1400				1690	2
	120		44×4	1700				2200	2
	180		300	3000	800	1825		4500	3
50 kVA	10	156	44×2	850	700	1650	125	1100	1
	30		44×4	1700				2200	2
	60		300	3000	800	1825		4500	3
	120		500	4000	900			7210	4
	180		300×2	6000	800			9000	6
100 kVA	10	156	44×3	1350	800	1825	125	1800	2
	30		300	3000				4500	3
	60		500	4000	900			7210	4
	120		1000	Contact us for information.					
	180		1500						
200 kVA	10	156	200×2	4400	800	1825	125	6200	4
	30		300×2	6000				9000	6
	60		1000	Contact us for information.					
	120		2000						
	180		2500						

*Even when an optional battery is used, the optional charger is not necessary.



Battery cubicle / Input transformer unit

■ Input transformer (Option)

Cubicle type

Capacity	Dimensions (mm) W	D	H1	H2	Weight (kg)
20 kVA	400	700	1400	125	360
50 kVA	700		1650		635
100 kVA	750	800	1825		930
200 kVA	1000	900			1100

BOX type

Capacity	Dimensions (mm) W	D	H1	H2	Weight (kg)
20 kVA	400	700	675	75	310
50 kVA	700		875		565
100 kVA	750	800	1075		830

Note: Cubicle type for 200 kVA

ECO PRODUCTS

■ ECO PRODUCTS

Sanyo Denki's ECO PRODUCTS are designed with the concept of lessening impact on the environment in the process from product development to waste.The product units and packaging materials are designed for reduced environmental impact.We have established our own assessment criteria on the environmental impacts applicable to all processes,ranging from design to manufacture.Those products that satisfy the criteria are accredited as ECO PRODUCTS.

Notes when investigating use of this product in your applications

- Before starting installation, assembling and use, read the "Operation Manual" carefully and use the product correctly in your applications.
- When you are going to use this product in the following application, the special considerations are required for operation, running, maintenance and control. Be sure to consult with our company as a part of your investigations.
  - (a) Medical equipment and other equipment that are related directly to human life.
  - (b) Train or elevator that can give injury to human body.
  - (c) Socially and publicly important computer systems.
  - (d) And other equipment that are related to safety of human life and that can affect severe effects on maintenance of public functions.
- For the applications that undergo vibration such as vehicles, ships and transportation facilities, please consult with our company.
- Never modify this product or give additional processing to this product.
- For the installation andmaintenance work, please consult with our company or with specialized company.

※For any inquiry or consultation, please contact our sales representative.

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